UNITED STATES PATENT AND TRADEMARK OFFICE

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10/582,623	06/12/2006	Christoph Weber	STT-C-PCT-US	2788

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EXAMINER
SHECHTMAN, SEAN P

ART UNIT	PAPER NUMBER
2121	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 February 2008*.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,5,6,12,14-16,18 and 19* is/are rejected.

7)☒ Claim(s) *2-4,7-11,13 and 17* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 June 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All   b)☐ Some * c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Specification

1.   Objections withdrawn.

Claim Rejections - 35 USC § 112

2.   Rejections withdrawn.

Claim Rejections - 35 USC § 102

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3.   Claims 1, 5, 12, 14-16, 18, are rejected under 35 U.S.C. 102(b) as being anticipated by WO 02/37168 to Drain (hereinafter referred to as Drain), supplied by applicant.

Referring to claims 1, 18, Drain teaches a method/system for determining a deviation of at least one regulating variable on a chip removal machine with a mechanical drive for a tool or a workpiece (Page 5, lines 1-31, tool, workpiece, actuators), regulated by a control system, wherein the regulation comprises a plurality of values C, X, Z of at least three spatial axes c, x, z for the control system and for the drive, and the values C, X, Z have a functional relation f_{bi} with the axes c, x, z, (Page 4, lines 15-35, controlled motion along Z, C, Z' and X) comprising the steps of:

preparing a protocol from a plurality of control system actual values $C_{p,s}$, $X_{p,s}$, $Z_{p,s}$ detected by measuring means (Page 6, lines 29 – Page 7, line 2, Page 5, lines 7-9, encoder 20; Page 5, lines 11-14, encoder 26; Page 5, lines 16-18, encoder 32; Page 5, lines 21-23, encoder 38; and/or Page 10, lines 6-11, commanded Z

and Z' from commanded values X and C passed to functions) or selected drive actual values $C_{p,a}$, $X_{p,a}$, $Z_{p,a}$,

calculating a control system nominal value according to $Z_{bi,s}=f_{bi}(C_{p,s}, X_{p,s})$ or a drive nominal value according to $Z_{bi,a}=f_{bi}(C_{p,a}, X_{p,a})$, at least in relation to the z-axis (Page 9, line 21 – Page 10, line 11, f1 or f2; See also Page 10, lines 1-15, actuators), and

calculating a control system differential value according to $D_{z,s}=Z_{p,s}-Z_{bi,s}$ or a drive differential value according to $D_{z,a}=Z_{p,a}-Z_{bi,a}$, at least in relation to the z-axis (Page 10, lines 16-23, subtracting Zmean from Z1 to Zn, where Zmean is a function of Z1-Zn).

Referring to claim 5, Drain teaches that one determines an error differential value according to $D_{z,a}^{f}=Z_{p,a}-Z_{bi,a}^{f}$ with $Z_{bi,a}^{f}=f_{bi}(C_{p,s}, X_{p,s})$ at least for the drive and at least in relation to the z-axis (Page 10, lines 16-23, subtracting Zmean from Z1 to Zn, where Zmean is a function of Z1-Zn; See also Page 10, lines 1-15, actuators).

12. The method according to claim 1, wherein one calculates, for one or more other axes x, c, nominal values C_{bi}, X_{bi}, differential values (page 11, line 13-29, current commanded position minus previous commanded position, for all but Z' axis) $D_{x/c,a}$, $D_{x/c,s}$, peak-to-valley values $D_{x/c,a,ptv}$, $D_{x/c,a}^{\phi}{}_{,ptv}$, $D_{x/c,s,ptv}$, $D_{x/c,s}^{\phi}{}_{,ptv}$, one or more of error differential values (page 10, line 28- page 11, line 10, error voltage for each actuator) $D_{x/c,a}^{f}$, $D_{x/c,s}^{f}$ and contouring differential values

D.sub.x/c,s.sup..phi., D.sub.x/c,a.sup..phi. *or* a combination thereof for the control

system or for the drive or a combination thereof.

14. The method for a chip removal machine for the production of optical lenses

from plastic according to claim 1 (Page 2, lines 9-34).

15. The method according to claim 1, wherein one converts the values C, X, Z of

the axes c, x, z into a Cartesian system of coordinates or into a polar system of

coordinates (Page 2, lines 1-8, points file; Page 7, lines 13-27).

16. The method according to claim 1, wherein one starts from a theoretical

cutting point of an ideal point-like tool (Page 16, lines 6-15) and convert the values C, X,

Z of the axes c, x, z (Page 2, lines 1-8, points file; Page 7, lines 13-27) for use of a

circular carbide tip (Page 6, lines 2-6), with the circular carbide tip having a center point

corresponding to the theoretical cutting point (Page 7, lines 22-27).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of

the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

the various claims was commonly owned at the time any inventions covered therein

were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4.　　　Claims 6, 19, are rejected under 35 U.S.C. 103(a) as being unpatentable over Drain as applied to claims 1, 18 above, and further in view of U.S. Pat. No. 5,903,474 to Sadler et al (hereinafter referred to as Sadler).

　　　Drain teaches an output unit is provided for the representation of the values (page 15, lines 25- page 16, line 15; Page 6, lines 29 – Page 7, line 2, Page 5, lines 7-9, encoder 20; Page 5, lines 11-14, encoder 26; Page 5, lines 16-18, encoder 32), wherein the function f.sub.bi is a 3D polynomial (Page 10, lines 11-15). Drain teaches all of the limitations set forth above, however fails to teach the function f.sub.bi is a bicubic surface spline or a spiral spline.

　　　However, Sadler teaches a bicubic surface spline or a spiral spline function (Col. 9, lines 18-26; Col. 13, lines 10-26).

　　　Drain and Sadler are analogous art because they are from the same field of endeavor, machining.

　　　Because both references teach functions, it would have obvious to one of ordinary skill in the art at the time that the invention was made to substitute one function for the other to achieve the predictable result of a 3D bicubic surface spline or a spiral spline function.

Allowable Subject Matter

5.   Claim 2 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Referring to claim 2, neither Drain nor the prior art of record, taken either alone or in obvious combination disclose that at least for the drive and the z-axis a contouring differential value is determined according to

$$D.sub.z,a.sup..phi.=Z.sub.p,a-Z.sub.bi,a.sup..phi.$$

with

$$Z.sub.bi,a.sup..phi.=f.sub.bi(C.sub.p,a+.DELTA..phi., X.sub.p,a),$$

where the value .DELTA..phi. corresponds to a phase shift of the c-axis, which results in a torsion of the generated lens contour, wherein plural values of Z.sub.bi,a.sup..phi. are determined.

It is for these reasons that applicant's invention defines over the prior art of record. Claims 3, 4, 7-11, 13 and 17 depend from claim 2 and are therefore also allowable.

Response to Arguments

6.   Applicant's arguments filed 2/25/08 have been fully considered but they are not persuasive.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies

(i.e., the claimed function fbi is integral, which means that the intervals are infinitely small; system/drive differential values are for all values and individual) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Applicant argues that Drain fails to teach calculating a differential value as a function of the nominal value. The examiner respectfully disagrees. Drain teaches Zmean is a function of Zmax, wherein Zmax is the maximum commanded position of the workpiece along the Z axis, wherein Zmax = f1(X,C) (Page 9, line 8 - Page 10, line 27). Drain further teaches that subtracting Zmean from Z1 to Zn (Page 10, lines 16-23). The examiner respectfully submits that subtracting Zmean from Z1 to Zn, wherein Zmean is a function of Zmax, wherein Zmax is the maximum commanded position of the workpiece along the Z axis, wherein Zmax = f1(X,C) (Page 9, line 8 - Page 10, line 27), is calculating a differential value as a function of the nominal value.

Applicant argues that Drain fails to teach calculating a differential value as a function of the nominal value, since the value Zmean is always the same and is not a function fbi of C and X. The examiner respectfully disagrees. Drain teaches Zmean is a function of Zmax (Col. 10, lines 16-27), and Drain teaches Zmax is a function fbi of C and X, wherein Zmax = f1(X,C) (Page 9, line 8 - Page 10, line 27). The examiner respectfully submits that a function of a function of C and X, is a function of C and X.

Conclusion

7.   Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sean P. Shechtman whose telephone number is (571)272-3754. The examiner can normally be reached on 9:30am-6:00pm, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decady can be reached on (571) 272-3819. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SPS

Sean P. Shechtman

June 28, 2008

/Sean P. Shechtman/
Primary Examiner, Art Unit 2121